

JUN 10 2008

Environmental
Cleanup Office



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

June 9, 2008

MEMORANDUM

SUBJECT: Data validation report for the Trace Volatile Organics (TVOA) analysis of sample from the Harbor Oil Site Case: 37399 SDG: J8K16

FROM: Raymond Wu, QA Chemist
Office of Environmental Assessment *RW* 6/9/08

TO: Christopher Cora, Remedial Project Manager
Office of Environmental Cleanup

CC: Lisa Gilbert, Task Order Manager
Parametrix

The quality assurance (QA) review of one water sample collected from the above referenced site has been completed. The sample was analyzed for TVOA in accordance with the USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) for Multi-Concentration Organic Analysis (SOM01.2) by KAP Technologies, Inc. in The Woodlands, Texas. The following sample was evaluated in this validation report:

SDG: J8K16

J8K16

DATA QUALIFICATIONS

The following comments refer to the laboratory performance specification outlined in the Quality Assurance Project Plan (for Harbor Oil Superfund Site in Portland, OR) dated March, 2008, USEPA CLP SOW for Organic Analysis (SOM01.2, 05/2008), and applicable criteria set forth in the USEPA CLP National Functional Guidelines for Organic Data Review (07/2007).

Holding Time - Acceptable

The sample met Validated Time of Sample Receipt (VTSR) and analytical holding time criteria for TVOA analysis. It was collected on 5/1/08, received by the laboratory on 5/7/08, analyzed for TVOA within 14 days of sample collection. The cooler temperature, upon the verified time of sample receipt (VTSR), was at 3°C. That was within the acceptable limits of 2-10°C. None of the data was qualified on this basis.

Instrument Performance Checks - Acceptable



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Two GC/MS systems were used for the sample analysis. The instruments used met the performance checks, ion abundance criteria and retention time stability checks and the sample was analyzed within acceptable 12-hour QC periods. None of the data was qualified on this basis.

Initial Calibrations (ICAL)

- The frequency of analysis of ICALs was met. All of the ICALs met the technical acceptance criteria, i.e., the percent relative standard deviation (%RSDs), minimum relative response factors (RRFs), retention time windows, chromatographic resolutions for all target compounds and surrogates with the following exceptions:

TVOA (5/14/08, instrument A-5973 GC/MS)

- The %RSD of 1,2,4-Trichlorobenzene exceeded the 30% QC limit. The recalculation of %RSD indicated that the instrument was not linear at the high end. This Compound was not detected in the associated sample at or above the CRQL and would be qualified as J/None.

Continuing Calibration Verification (CCV) - Acceptable

The frequency of analysis of CCV checks, chromatographic resolution, percent differences (%Ds) between the mean and daily response (calibration) factors, minimum response factors and retention time shifts were met by all target compounds and surrogates. The recoveries of the TVOA standards were within the control limits. None of the data was qualified on this basis.

Quantitation Limits

The TVOA sample was analyzed at the contract required quantitation limits (CRQL). The CRQLs were based on the lowest standard concentration analyzed in the initial calibrations. Target compounds that were detected at concentrations less than the QLs were qualified as estimated, "J". Trace level of common contaminants detected in the samples at concentration < CRQL were qualified by the reviewer as non-detects, "U", and reported at the CRQL. All of the reported results were adjusted for sample amount analyzed. When applicable, all of the "B", "J", "D", "S" and "E" qualifiers applied by the laboratory were crossed out by the reviewer.

The sample run met the Contract-Required Quantitation Limits (CRQLs). There was no TVOAs detected above the CRQL. Detected Target compounds in the samples at concentrations less than the CRQLs were qualified as estimated, "J". Trace level of common contaminants detected in the samples at concentration < CRQL were qualified by the reviewer as non-detects, "U", and reported at the CRQL.

Blanks

The frequency of analysis of blanks and surrogate recovery criteria were met by all of the blanks analyzed. There were no contaminants found in any of the blanks with the exception of VBLKAM which had a Methylene Chloride hit below the CRQL.

Analytical Sequence - Acceptable

All of the standards, blanks, samples, and QC samples were analyzed in accordance with the SOW specified analytical sequence. The retention times as monitored by the internal standards (TVOAs) and surrogates were

within the specified RT windows. The sample analysis was within an acceptable 12 hour QC period and was bracketed by a technically acceptable CCV check standards. None of the data was qualified on this basis.

Surrogates/Deuterated Monitoring Compound Recoveries

Fourteen deuterated TVOAs were spiked in the sample and QC samples to evaluate laboratory performance. The 14 DMCs and their corresponding recovery acceptance limits are:

"Water"

DMCs	Recovery Limits (%)	DMCs	Recovery Limits (%)
Vinyl chloride -d3 (VCL)	65-131	1,2- Dichloropropane-d6 (DPA)	79-124
Chloroethane-d5 (CLA)	71-131	Toluene-d8 (TOL)	77-121
1,1- Dichloroethene-d2 (DCE)	55-104	trans-1,3-dichloropropene-d4 (TDP)	73-121
2-Butanone-d5 (BUT)	49-155	2-Hexanone-d5 (HEX)	28-135
Chloroform-d (CLF)	78-121	1,4-Dioxane (DXE)	50-150
1,2-Dichloroethane-d4 (DCA)	78-129	1,1,2,2-Tetrachloroethane-d2 (TCA)	73-125
Benzene-d6 (BEN)	77-124	1,2-dichlorobenzene-d4 (DCZ)	80-131

All of the water volatile surrogate recoveries met the applicable recovery criteria.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Samples J8K16 was designated for MS/MSD analyses for TVOA. The percent recovery and percent difference (%RPD) were met for all. Therefore, none of the data was qualified.

Internal Standards

VOCs

- The acceptance criteria for internal standards (IS) was within +/- 30 seconds for retention time (RT) shifts and 60% to 140% of the IS area as compared to the IS RT and area of the daily continuing verification standard. All of the analyses met the IS area & RT criteria and none was qualified on this basis.

Compound Identification - Acceptable

All of the detected target compounds were within the retention time windows. The TVOAs met the USEPA spectral matching criteria and were judged to be acceptable.

Tentatively Identified Compounds

Chromatographic peaks in the samples' TVOA run that were not target compounds, surrogates or internal standards with areas > 10% of the nearest IS must be tentatively identified by the laboratory using a mass spectral search of the NIST library. The TICs identified by the lab on Form 1s were qualified as tentatively identified at estimated concentrations, "JN", with an unknown bias.

Laboratory Contact

The laboratory was not contacted during this review.

Overall Assessment

The total number of data points evaluated was 51 and none was qualified. The data, as qualified, are acceptable and can be used for all purposes.

Data Qualifiers		
	U	The analyte was not detected at or above the reported result.
	J	The analyte was positively identified. The associated numerical result is an estimate.
	UJ	The analyte was not detected at or above the reported estimated result. The associated numerical value is an estimate of the quantitation limit of the analyte in this sample.
	R	The data are unusable for all purposes.
	N	There is evidence the analyte is present in this sample.
	JN	There is evidence that the analyte is present. The associated numerical result is an estimate.

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8K16

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW05032

Lab Code: KAP

Case No.: 37399

Mod. Ref No.: _____

SDG No.: J8K16

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: S-0892.01

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: A13956

Level: (TRACE/LOW/MED) TRACE

Date Received: 05/07/2008

% Moisture: not dec. _____

Date Analyzed: 05/15/2008

GC Column: RTX-VMS

ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Purge Volume: 25.0 (mL)

CAS No.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon disulfide	0.50	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-Butanone	5.0	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
56-23-5	Carbon tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U

SOM01.2 (6/2007)


6/9/08

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1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8K16

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW05032

Lab Code: KAP

Case No.: 37399

Mod. Ref No.: _____

SDG No.: J8K16

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: S-0892.01

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: A13956

Level: (TRACE/LOW/MED) TRACE

Date Received: 05/07/2008

% Moisture: not dec. _____

Date Analyzed: 05/15/2008

GC Column: RTX-VMS

ID: 0.25

(mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Purge Volume: 25.0 (mL)

CAS No.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
79-01-6	Trichloroethene	0.50	U
108-87-2	Methylcyclohexane	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
95-47-6	o-Xylene	0.50	U
179601-23-1	m,p-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

SOM01.2 (6/2007)


6/9/08

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1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J8K16

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW05032

Lab Code: KAP

Case No.: 37399

Mod. Ref No.: _____

SDG No.: J8K16

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: S-0892.01

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: A13956

Level: (TRACE or LOW/MED) TRACE

Date Received: 05/07/2008

% Moisture: not dec. _____

Date Analyzed: 05/15/2008

GC Column: RTX-VMS ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)


CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	11.06	11	JBN
02					
03					
04					
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28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

SOM01.2 (6/2007)


6/9/08

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